



Motor and Equipment Manufacturers Association (MEMA)
Comments on
Advanced Technology Vehicles Manufacturing Incentive Program
Authorized by
Section 136, Energy Independence and Security Act of 2007 (P.L. 110-140)
Funded by
Section 129, Consolidated Security, Disaster Assistance, and
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Introduction

The Motor & Equipment Manufacturers Association (MEMA) represents almost 700 companies that manufacture motor vehicle parts for use in the light vehicle and heavy duty original equipment and aftermarket industries.¹ MEMA represents its members through three market segment associations: Automotive Aftermarket Suppliers Association (AASA), Heavy Duty Manufacturers Association (HDMA), and Original Equipment Suppliers Association (OESA).

The industry is a leader in the development of safety and energy technology critical to creating today's vehicles and those of the next generation. The members of MEMA have long worked with their customers to develop technologies that improve vehicle performance, safety, and fuel economy through a variety of components. A recent study found that suppliers now account for as much as 70 percent of the value-added in the manufacture of motor vehicles.² Suppliers account for over 40 percent of total automotive investment in research and development and continue to take on a greater role in the design, testing, and engineering of new vehicle parts and systems – a role that is expected to grow significantly over the next five years. Supplier companies are not only becoming increasingly responsible for producing significant segments of motor vehicles but also are more likely to solely design and engineer those parts.

MEMA supported the Energy Independence and Security Act of 2007³ (EISA), which, among its many directives, called for an Advanced Technology Vehicles Manufacturing Incentive Program under Section 136. This Section authorizes funding for direct loans to motor vehicle

¹ Motor vehicle parts suppliers are the nation's largest manufacturing sector, directly employing 783,100 U.S. workers and contributing to 4.5 million private industry jobs across the country. Suppliers manufacture the parts and technology used in the domestic production of more than 11 million new cars and trucks produced each year, as well as the aftermarket products necessary to repair and maintain over 247 million vehicles on the road today.

² *Who Really Made Your Car? Restructuring and Geographic Change in the Auto Industry*, by Thom as Klier and James Rubenstein; Published by W.E. Upjohn Institute for Employment Research, 2008.

³ P.L. 110-140

manufacturers and suppliers to foster the advancement of energy efficient vehicles, engineering integration costs, and qualifying systems and components. MEMA supported the legislative effort to appropriate \$25 billion to fund Section 136 in H.R. 2638, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act of 2009, which was signed by the President on Sept. 30, 2008.⁴ H.R. 2638 requires the Department to announce a regulatory framework through an Interim Final Rule (IFR) by December 1, 2008.

To address the goals of EISA – increased energy independence through reduced reliance on foreign oil – the industry is required to manufacture a wide range of advanced technology fuel efficient vehicles. These vehicles depend on the development, production, and installation of sophisticated systems and component parts. In order to meet the goals mandated in EISA, suppliers must have equal access to all funds available in the loan program. Therefore, the IFR must be equitable and flexible in nature and ensure availability of Section 136 loan program funds for suppliers.

Furthermore, the IFR must meet the following four goals:

- The loan program must move developed, near-term technology into volume production;
- The loan program must improve the value equation for technology currently being developed and accelerate high volume production and availability;
- The loan program must assist suppliers and vehicle manufacturers to leverage current research and deploy more quickly future technologies that will save fuel and decrease emissions; and
- The loan program must be efficiently implemented, and the funds must be equitably distributed.

This document provides information to assist the Department of Energy (The Department or DOE) to move expeditiously and publish an IFR that addresses these goals. MEMA provides recommendations focused on a number of critical challenges. These challenges fall into four categories:

- I. Qualifying Components**
- II. Definitions, Eligibility, and Baseline Measurement Criteria**
- III. Applicability of Research and Development**
- IV. Loan Application Process**

⁴ P.L. 110-329

I. Qualifying Components

A. How does the “Advanced Technology Vehicles Manufacturing Incentive Program” apply to system and component manufacturers?

Section 136(a)(4) outlines a two-prong definition of “qualifying components” that distinguishes the separate, real world roles of component manufacturers and vehicle manufacturers. First, systems and components must be designed, developed, and validated for advanced technology vehicles and, second, these components must be installed for the purpose of meeting the requirements of the statute.

A system or component supplier does not make the determination to “install for the purpose of meeting the performance requirements” outlined in the statute. That decision is made by the vehicle manufacturer. In fact, it may be two to three years after a component manufacturer has designed, developed, and validated the performance of a given component or system before the vehicle manufacturer releases and installs it onto a vehicle platform. Throughout this process, suppliers collaborate with original equipment manufacturers (OEMs). Also, during the process, suppliers may test components and systems on a wide range of vehicle platforms, each with varying degrees of performance. However, in the end, the OEM makes the final determination about what is released and installed on specific vehicles.

Therefore, to meet the first prong of Section 136(a)(4), suppliers must demonstrate that they have “designed” and “validated” components and systems for advanced technology vehicles. Consequently, only vehicle manufacturers are able to demonstrate, release, and provide the supporting data that the qualifying component is “installed” on an advanced technology vehicle, thus, meeting the second prong of this test.

Requiring a system or component manufacturer to provide data on vehicle installation will limit, if not preclude, supplier eligibility. Clearly, this is not the intent of the statute and will not meet the goals of the legislation.

II. Definitions, Eligibility, and Baseline Measurement Criteria

A. How should DOE define qualifying components for supplier eligibility?

Qualifying components should be defined as: “Components, systems, or groups of sub-systems that optimize the vehicle’s demands for functionality while contributing measurably to the vehicle’s overall fuel efficiency and/or reducing the vehicle’s emissions output.” Qualifying components should be evaluated on an individual basis or as a part of a whole system.

B. How should DOE evaluate technologies for applicability to the loan program?

In evaluating technologies to be used for applicability to the Section 136 program, DOE should use, as a baseline, the technology tested and validated by the National Highway Traffic Safety Administration (NHTSA) in the notice of proposed rulemaking (NPRM) on the “Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011- 2015.”⁵ In

⁵ NHTSA Docket No. 2008-0089; 73 Federal Register at 24352-24487

following this format, there is a broad range of “qualifying components” that have been extensively analyzed and evaluated.

In the NPRM, NHTSA details specific components and the fuel efficiency that can be expected for classes of vehicles.⁶ While the NPRM for Corporate Average Fuel Economy (CAFE) standards outlines a significant number of components that provide substantial fuel economy improvements, the list of technologies in the NPRM is not exhaustive. In addition to the components and systems outlined in the CAFE proposal, the Department must recognize that a number of additional components and systems can be used by vehicle manufacturers to meet the emission reductions and fuel efficiency goals either exclusively or incrementally. Examples of components that qualify but are not listed in the NPRM include, but are not limited to, fuel cell technology, electric and hybrid-electric powertrains and related products, hydraulic hybrid technology, advanced batteries and battery systems, superchargers that boost vehicle performance, engine and vehicle accessory drives, thermal management technologies, and advanced, light weight materials.

DOE should have the authority to require applicants to demonstrate the technical efficacy of a component or system if not otherwise validated and/or tested by a federal agency or independent engineering service provider. This may require information beyond that which is required from manufacturers seeking funding for technology that has been publicly and independently validated. For example, when evaluating the eligibility of electric and hybrid-electric technologies and the fuel efficiency of electric and hybrid-electric vehicles, the DOE should assess such technologies and fuel efficiency based on their equivalent energy consumption as compared to internal combustion engine equipped vehicles (i.e., carbon equivalents or equivalent miles per gallon).

For additional information, the attached technology roadmap (See Appendix A) conceptually illustrates the impact of near-term technologies coming online during MYs 2011-2015 on fuel efficiency. (Appendix A is not all-inclusive; it is meant to show examples of some technologies.) By focusing on the technologies outlined by NHTSA in the NPRM and technologies that have been independently tested and validated, the Department will provide funding for technologies that are truly advanced and will allow for the volume production and distribution necessary to meet the fuel economy required under EISA. By relying on standards recognized and used within the industry, DOE will provide true value in awarding loans.

C. Should the loan program fund enabling technologies?

Enabling technology will be necessary to allow the vehicles to work with a component(s) or system(s) to provide the measured fuel economy under real world conditions. Enabling technologies make it possible for component systems and/or components to achieve better efficiencies for an advanced technology vehicle. Some examples include:

- **Diesel Engines** – These engines have always been able to deliver substantial *efficiency* improvements over a gasoline engine. But since the United States has the most stringent tailpipe criteria emissions regulations in the world, the *emissions control system*, an enabling technology, *enables* the high efficiency diesel to be sold in the U.S. market.

⁶ 73 Federal Register at 24379-24381

- **Electric Air Conditioning Compressor** – In a gas-electric hybrid vehicle, this compressor operates when the internal combustion engine is “off.” The *compressor’s technology enables* a hybrid vehicle to operate in “engine-off” mode at low speeds and in traffic while still providing passengers a cool cabin. Therefore, the technology enables greater hybrid fuel *efficiency* in the real world. (Note: The NHTSA CAFE test cycle does not account for air conditioning energy consumption.)
- **Material Compounding Development** – Modified polymers can offer lower weight material options to help improve overall vehicle performance and characteristics.
- **Regenerative Braking** – This technology allows a vehicle to recapture and store part of the kinetic energy that would otherwise be lost to heat when braking. This energy is used to recharge the electric batteries to enable the vehicle to achieve a substantial increase in fuel efficiency. Implementation requires fitment of a reversible electric drive and control systems to blend regenerative and traditional friction brake output based on driver demand.

Enabling Technologies should be defined as: “Sub-systems or components that are part of a system or group of systems in which, *with* the enabling component(s), the system(s) can achieve higher fuel efficiency, in real world conditions.” These components, however, may not be considered as part of a CAFE, EPA or NAS type analyses, but nonetheless, still are essential contributing parts enabling the technology to function effectively.

D. Should the loan program be used for the development and production of technology already in use in a limited volume?

The loan program should cover the development and/or manufacturing of applied technologies and to expand and accelerate the availability of advanced vehicles and qualifying systems and components in the 2011-2015 time horizon. Some of these technologies are available now, but are not widely used. Some of these technologies are widely used in other parts of the world, but are not available in the U.S. to any significant degree. Many of these technologies that are commercially available are not currently manufactured in the United States.

By funding these technologies, the loan program will help suppliers expand their domestic manufacturing capabilities, support innovation and evolution of existing technologies, and increases product lines to OEMs. Not only will these funds help meet the congressional goals to reduce emissions and increase fuel efficiency, but they will also provide the consumer with more choice and, as supply increases, increased cost effectiveness.

Various components, systems, or groups of systems can all collaboratively improve an advanced technology vehicle’s fuel efficiency and emissions output. The recommended criteria for eligibility determination, using a series of “if ... then” statements, is suggested as follows:

- IF the component, system, or group of systems is *currently* utilized on advanced technology vehicle platforms AND *can contribute measurably* to the vehicle achieving the 125 percent improvement, THEN the component, system, or group of systems should BE eligible.
- IF the component, system, or group of systems is *capable of being utilized on future* advanced technology vehicle platforms (e.g., MYs 2011-2015) AND *can contribute*

measurably to the vehicle achieving the 125 percent improvement, THEN the component, system, or group of systems should BE eligible.

- IF the component, system, or group of systems is *currently being developed* for utilization on *future* advanced technology vehicle platforms (e.g., MYs 2015 and beyond) AND is *capable of contributing measurably* to the vehicle to achieve the 125 percent improvement, THEN the component, system, or group of systems should BE eligible.
- IF a vehicle platform, and associated components, would fail to meet the 125 percent threshold because one (1) component or system were removed, THEN the removed component, system, or group of systems should BE eligible. (Clearly, this is because the one (1) component or system is essential for the vehicle platform to qualify as an advanced technology vehicle.)

III. Research and Development

A. What should be included as eligible research and development costs?

The Department should accept applications for funding research and development (R&D) projects. This will enable emerging and less developed technologies to penetrate into future vehicles in volume, improve the incremental value of technologies, and add future technologies into the marketplace. R&D directs the discovery of knowledge with specific technical and commercial objectives and produces qualifying systems and components. This includes the design and the construction of physical prototypes and/or analytical models, the development and validation of new technology, and the conversion of these prototypes and/or models into components and systems that can be produced and installed on vehicles. DOE should fund R&D, including engineering costs associated with system and component integration, in order to improve the value equation for the technology currently being developed and to allow future technologies to be deployed more quickly.

Funding from the loan program for R&D will enable suppliers to make the necessary breakthroughs in technology development that are needed to push advanced technology vehicles even further. This helps move the needle and accelerate production timetables to reach the efficiency and emissions output requirements. Furthermore, product and engineering processes must be eligible and included in order to keep domestic OEM and supplier manufacturing facilities globally competitive. New products may require new or modified manufacturing processes and these processes should be eligible for loans.

Eligible costs should include development and test equipment, facility modifications (retooling, expansion), engineering and manufacturing processes (associated with technology integration), and engineering tools (i.e., simulation and analysis).

B. How should manufacturing technology be covered in the rule?

The development and deployment of technologies that assist system and component and vehicle manufacturers in developing advanced systems, such as new powertrain systems necessary to meet CAFE and emission standards, should be included as eligible costs under the loan program. These technologies that launch and control the manufacturing processes are

required to initiate the production of these advanced vehicles and components and ensure that fuel efficiency and emissions standards are met.

IV. Loan Application Process

A. How does the Congressional Review Act of 1996 [5 U.S.C. 801 et seq.] apply to the loan program?

The Congressional Review Act (CRA) specifically excludes any rule that has been designated as an emergency.⁷ In appropriating the funds in the continuing resolution, Congress found in part: “. . . the amount provided by this section is designated as an emergency requirement and necessary to meet *emergency needs*.”⁸ (Emphasis added) By designating the funds as an emergency, Congress specifically exempted these funds from the requirements of the Congressional Review Act.

B. What application fees are appropriate for Section 136 loans?

In Section 129 of the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act of 2009, Congress appropriated \$10 million for administrative fees for the Department’s use. Therefore, DOE should not impose application or administrative fees on loan applicants or recipients.

C. How much time is necessary for applicants to submit applications after release of solicitation for applications?

The IFR should take effect and be published at the same time as the Solicitation Announcement. Since suppliers and vehicle manufacturers are both intended to receive loans, applicants should have sixty (60) calendar days from the date of publication in the *Federal Register* to submit loan applications. This timeframe would provide sufficient time for suppliers and vehicle manufacturers to complete and submit loan applications as well as any necessary supporting documents, data, and other relevant materials.

In accepting loan applications, the Department should plan for efficient implementation and equitable distribution of funds between suppliers and OEMs. This would ensure that suppliers – who account for 70 percent of the value-added in the manufacture of motor vehicles⁹ – could fully and fairly utilize the loan program.

D. How much time is appropriate to allow the Department of Energy to examine applications and grant loans?

When applying for private sector loans, it typically takes banks two to three weeks from receiving the application to approve or deny applications. Therefore, MEMA recommends that

⁷ 5 U.S.C. 801(c)(2)(A)

⁸ P.L. 110-329 Section 129(b)

⁹ Klier and Rubenstein

thirty (30) calendar days after the application deadline would be an appropriate amount of time for the Department to consider, review, and grant the loan funding.

E. After initial round of applications is accepted and loans have been granted, how should future applications be solicited and accepted until funds are no longer available?

If appropriated funds remain available after the first round of loans has been granted, DOE should publish a Solicitation Announcement 120 calendar days after the first loans were granted under the previous solicitation. This process, as laid out above (Section III. C and III. D), shall continue until all funds appropriated have been exhausted.

F. How will loan terms be addressed in the IFR?

The loan program should provide for loan terms that are flexible enough to meet the financial conditions associated with the types of development projects allowed under Section 136. In particular, the loan program should provide applicants:

- the ability to make staged draw downs of allocated funds as needed over the course of the development cycle and ramp-up of the applicable project;
- a fixed rate of interest (calculated on a simple rather than compounded basis) to ensure predictability in financial planning;
- a deferment of payments as outlined in the statute;
- the ability to make pre-payments of principal without penalty; and
- the option to repay outstanding principal in a bullet payment at the end of the project.

G. How should the Department determine financial viability?

The motor vehicle industry is facing one of the most difficult economic times in memory. This current situation stems from a drastic reduction in vehicle production volumes, the current credit crisis, and the deterioration of consumer confidence. Most analysts expect the market to stabilize and drastically improve and perhaps recover by 2011. However, improved fuel economy will not materialize if system and component manufacturers are unable to develop and produce advanced technology. Any financial viability provisions must recognize this dilemma.

In addition, collateral requirements must acknowledge that work done by some suppliers may not require the purchase of physical assets. While the tools and equipment purchased with the funding can be used, flexibility should be provided in order to allow suppliers to use other assets as collateral. In return, the Department should have the ability to require priority treatment for Section 136 loans.

H. How should intellectual property be treated under this loan program?

As this is a federal loan program and not a grant program, any intellectual property created as a result of work carried out using loan funds will be the property of the inventor. Any intellectual property developed under a joint application will be subject to specific contractual agreements between the applicants.

I. How should confidentiality be treated under this loan program?

When designated by the applicant, all company confidential and proprietary information must be protected by the Department.

J. How should joint applications be handled?

Equal consideration should be given to both individual and joint applications.

Joint applications, including applications for collaborative research and development, should be accepted since it will allow small manufacturers and suppliers to participate in the program. In addition, such applications will allow suppliers and OEMs or multiple suppliers to combine resources to address the requirements of Section 136. In the automotive industry, joint ventures and other cooperative efforts are formed regularly in several configurations, such as:

- between suppliers at different levels of the supply chain;
- between suppliers at the same level in the supply chain;
- between suppliers and vehicle manufacturers; and
- between vehicle manufacturers themselves.

Because of these types of relationships, the application process for the loan program created by Section 136 should recognize various legal and working relationships and should provide the necessary flexibility in the application process to allow for the submission of joint applications.

K. Should consolidated loan applications be allowed?

The IFR should include flexibility to permit applications covering a single component or system or consolidated applications for multiple components or systems. This allows an individual supplier to submit a single consolidated application or multiple applications in order to allow for the greatest flexibility in the loan application process.

Conclusion

The goal of domestic energy independence outlined in EISA and Section 136 cannot be achieved without suppliers. As previously demonstrated, suppliers take on a significant role in the design, development, engineering, testing, validating and deployment of new vehicle technologies.

In order to expedite advanced vehicle technologies, DOE must draft implementing regulations that are flexible in nature. Such flexibility will help the vehicle of tomorrow meet more stringent fuel economy and emission reduction requirements. Component and system manufacturers must have equal access to the loan program, and the loans must be distributed equitably between suppliers and vehicle manufacturers. This would ensure that suppliers could fully and fairly utilize the loan program.

MEMA and its member companies support the efforts of the Department to publish the IFR without delay and to promptly make loans available to the industry.

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